

**REMARKS**

The Office Action dated July 13, 2006, has been received and carefully considered. In this response, claims 1, 18-21, 28-30, 41-43, 46, 106, 142, 145, and 146 have been amended, claims 172-175 have been added, and claims 89-105, 110-141, and 148-171 have been cancelled without prejudice. Entry of the amendments to claims 1, 18-21, 28-30, 41-43, 46, 106, 142, 145, and 146, the addition of claims 172-175, and the cancellation of claims 89-105, 110-141, and 148-171 without prejudice is respectfully requested. Reconsideration of the outstanding objections/rejections in the present application is also respectfully requested based on the following remarks.

I. THE ALLOWANCE/ALLOWABILITY OF CLAIMS 20-29, 41, 46, 47, 53-71, 75, AND 77-79

Applicant notes with appreciation the indication on page 27 of the Office Action that claims 53-71 are allowed. Applicant notes with equal appreciation the indication on page 27 of the Office Action that claims 20-29, 41, 46, 47, 75, and 77-79 would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Claims 20, 41, and 46 have been amended in this manner, and thus should now be allowable. Acknowledgment of same is respectfully requested. However, Applicants have opted to defer rewriting

others of these claims in independent form pending consideration of the arguments presented below with respect to the rejected claims.

## II. THE RESTRICTION/ELECTION REQUIREMENT

On pages 2-4 of the Office Action, the prior made restriction/election requirement was made final.

Applicants respectfully disagree with the Examiner regarding this issue. However, for purposes of forwarding the present application toward allowance, Applicants have cancelled claims 89-105, 110-141, and 148-171, without prejudice.

## III. THE OBJECTION TO CLAIMS 19 AND 42-52

On page 4 of the Office Action, claims 19 and 42-52 were objected to for informalities.

Claims 19 and 42 have been amended to address the Examiner's concerns.

In view of the foregoing, it is respectfully requested that the aforementioned objection to claims 19 and 42-52 be withdrawn.

## IV. THE OBVIOUSNESS REJECTION OF CLAIMS 1-12, 19, 30-34, 37, 42-45, 48, 50, AND 142-144

On pages 5-15 of the Office Action, claims 1-12, 19, 30-34, 37, 42-45, 48, 50, and 142-144 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Gitlin et al. (U.S. Patent No. 5,191,462) in view of Popplewell et al. (U.S. Patent No. 6,304,071). This rejection is hereby respectfully traversed with amendment.

Regarding claim 1, the Examiner asserts that it would have been obvious to modify the teachings of Gitlin et al. in view of the teachings of Popplewell et al. to arrive at the claimed invention. However, Applicants have amended claim 1 to recite a first receiver circuit to sample the signal according to at least two threshold levels to generate data samples, a level sampler to sample the signal to generate error samples, and an adaptive module to adjust the at least two threshold levels according to the data samples from the first receiver circuit and the error samples from the level sampler, wherein the first receiver circuit includes the previously claimed first and second sampling circuits and first select circuit. It is respectfully submitted that Gitlin et al. and Popplewell et al., either alone or in combination, fail to disclose, or even suggest, these newly recited claim limitations. Accordingly, it is respectfully submitted that amended claim 1 is allowable over Gitlin et al. and Popplewell et al., either alone or in

combination.

Regarding claims 2-12 and 19, these claims are dependent upon independent claim 1. Thus, since independent claim 1 should be allowable as discussed above, claims 2-12 and 19 should also be allowable at least by virtue of their dependency on independent claim 1. Moreover, these claims recite additional features which are not disclosed, or even suggested, by the cited references taken either alone or in combination.

At this point it should be noted that claims 172-174 have been added to recite additional dependent features to claim 1, and claim 175 has been added to claim several of the limitations of claim 1 in a slightly different manner.

Regarding claim 30, the Examiner asserts that it would have been obvious to modify the teachings of Gitlin et al. in view of the teachings of Popplewell et al. to arrive at the claimed invention. However, Applicants have amended claim 30 to recite an additional step of generating an error sample that indicates whether the data signal exceeds or is below a third threshold level, wherein the first, second, and third threshold levels are generated based at least in part upon the error sample. It is respectfully submitted that Gitlin et al. and Popplewell et al., either alone or in combination, fail to disclose, or even suggest, this newly recited claim limitation. Accordingly, is

it respectfully submitted that amended claim 30 is allowable over Gitlin et al. and Popplewell et al., either alone or in combination.

Regarding claims 31-34 and 37, these claims are dependent upon independent claim 30. Thus, since independent claim 30 should be allowable as discussed above, claims 31-34 and 37 should also be allowable at least by virtue of their dependency on independent claim 30. Moreover, these claims recite additional features which are not disclosed, or even suggested, by the cited references taken either alone or in combination.

Regarding claim 42, the Examiner asserts that it would have been obvious to modify the teachings of Gitlin et al. in view of the teachings of Popplewell et al. to arrive at the claimed invention. However, Applicants have amended claim 42 to recite a first receive circuit clocked by a first clock signal and a second receive circuit clocked by a second clock signal, wherein the second clock signal has a phase offset from the first clock signal, wherein the first receive circuit includes a first pair of sampling circuits and a first select circuit, wherein the first pair of sampling circuits is to capture a first pair of samples of the signal in response to the first clock signal, wherein the first select circuit is to select one of the first pair of samples according to a first previously generated sample

value output from the second receive circuit. Applicants have also amended claim 1 to recite a second receive circuit having a second pair of sampling circuits and a second select circuit, wherein the second pair of sampling circuit is to capture a second pair of samples of the signal in response to the second clock signal. It is respectfully submitted that Gitlin et al. and Popplewell et al., either alone or in combination, fail to disclose, or even suggest, these newly recited claim limitations. Accordingly, is it respectfully submitted that amended claim 42 is allowable over Gitlin et al. and Popplewell et al., either alone or in combination.

Regarding claims 45, 48, and 50, these claims are dependent upon independent claim 42. Thus, since independent claim 42 should be allowable as discussed above, claims 45, 48, and 50 should also be allowable at least by virtue of their dependency on independent claim 42. Moreover, these claims recite additional features which are not disclosed, or even suggested, by the cited references taken either alone or in combination.

Regarding claim 142, the Examiner asserts that it would have been obvious to modify the teachings of Gitlin et al. in view of the teachings of Popplewell et al. to arrive at the claimed invention. However, Applicants have amended claim 142 to recite the steps of generating, during the first data

reception interval, an error sample that indicates whether the signal level of the electrical signal conductor exceeds or is below a third threshold level, outputting, during a second data reception interval after the first data reception interval, a selected data sample being selected from the first data sample and the second data sample according a data sample generated during a third data interval prior to the second data reception interval, and outputting the error sample during the second data reception interval. It is respectfully submitted that Gitlin et al. and Popplewell et al., either alone or in combination, fail to disclose, or even suggest, these newly recited claim limitations. Accordingly, is it respectfully submitted that amended claim 142 is allowable over Gitlin et al. and Popplewell et al., either alone or in combination.

Regarding claims 143 and 144, these claims are dependent upon independent claim 142. Thus, since independent claim 142 should be allowable as discussed above, claims 143 and 144 should also be allowable at least by virtue of their dependency on independent claim 142. Moreover, these claims recite additional features which are not disclosed, or even suggested, by the cited references taken either alone or in combination.

In view of the foregoing, it is respectfully requested that the aforementioned obviousness rejection of claims 1-12, 19, 30-34, 37, 42-45, 48, 50, and 142-144 be withdrawn.

V. THE OBVIOUSNESS REJECTION OF CLAIMS 13-18, 35, 36, AND 49

On pages 15-17 of the Office Action, claims 13-18, 35, 36, and 49 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Gitlin et al. (U.S. Patent No. 5,191,462) in view of Popplewell et al. (U.S. Patent No. 6,304,071) and further in view of Fernandez et al. (U.S. Patent No. 5,448,200). This rejection is hereby respectfully traversed.

It is respectfully submitted that the aforementioned obviousness rejection of claims 13-18, 35, 36, and 49 has become moot in view of the deficiencies of the primary references Gitlin et al. and Popplewell et al. as discussed above with respect to independent claims 1, 30, and 42. That is, claims 13-18, 35, 36, and 49 are dependent upon independent claims 1, 30, and 42 and thus inherently incorporate all of the limitations of independent claims 1, 30, and 42. Also, the secondary reference Fernandez et al. fails to disclose, or even suggest, the deficiencies of the primary references Gitlin et al. and Popplewell et al. as discussed above with respect to independent claims 1, 30, and 42. Indeed, the Examiner does not



even assert such. Thus, the combination of the secondary reference Fernandez et al. with the primary references Gitlin et al. and Popplewell et al. also fails to disclose, or even suggest, the deficiencies of the primary references Gitlin et al. and Popplewell et al. as discussed above with respect to independent claims 1, 30, and 42. Accordingly, claims 13-18, 35, 36, and 49 should be allowable over the combination of the secondary reference Fernandez et al. with the primary references Gitlin et al. and Popplewell et al. at least by virtue of their dependency on independent claims 1, 30, and 42. Moreover, claims 13-18, 35, 36, and 49 recite additional features which are not disclosed, or even suggested, by the cited references taken either alone or in combination.

In view of the foregoing, it is respectfully requested that the aforementioned obviousness rejection of claims 13-18, 35, 36, and 49 be withdrawn.

#### VI. THE OBVIOUSNESS REJECTION OF CLAIMS 38-40

On pages 17-18 of the Office Action, claims 38-40 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Gitlin et al. (U.S. Patent No. 5,191,462) in view of Popplewell et al. (U.S. Patent No. 6,304,071) and further in view of Winters et al. (Adaptive Nonlinear Cancellation for High Speed

Fiber-Optic Systems, 1992). This rejection is hereby respectfully traversed.

It is respectfully submitted that the aforementioned obviousness rejection of claims 38-40 has become moot in view of the deficiencies of the primary references Gitlin et al. and Popplewell et al. as discussed above with respect to independent claim 30. That is, claims 38-40 are dependent upon independent claim 30 and thus inherently incorporate all of the limitations of independent claim 30. Also, the secondary reference Winters et al. fails to disclose, or even suggest, the deficiencies of the primary references Gitlin et al. and Popplewell et al. as discussed above with respect to independent claim 30. Indeed, the Examiner does not even assert such. Thus, the combination of the secondary reference Winters et al. with the primary references Gitlin et al. and Popplewell et al. also fails to disclose, or even suggest, the deficiencies of the primary references Gitlin et al. and Popplewell et al. as discussed above with respect to independent claim 30. Accordingly, claims 38-40 should be allowable over the combination of the secondary reference Winters et al. with the primary references Gitlin et al. and Popplewell et al. at least by virtue of their dependency on independent claim 30. Moreover, claims 38-40 recite

additional features which are not disclosed, or even suggested, by the cited references taken either alone or in combination.

In view of the foregoing, it is respectfully requested that the aforementioned obviousness rejection of claims 38-40 be withdrawn.

VII. THE OBVIOUSNESS REJECTION OF CLAIMS 51 AND 52

On pages 18-19 of the Office Action, claims 51 and 52 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Gitlin et al. (U.S. Patent No. 5,191,462) in view of Popplewell et al. (U.S. Patent No. 6,304,071) and further in view of Hui (U.S. Patent No. 6,262,591). This rejection is hereby respectfully traversed.

It is respectfully submitted that the aforementioned obviousness rejection of claims 51 and 52 has become moot in view of the deficiencies of the primary references Gitlin et al. and Popplewell et al. as discussed above with respect to independent claim 42. That is, claims 51 and 52 are dependent upon independent claim 42 and thus inherently incorporate all of the limitations of independent claim 42. Also, the secondary reference Hui fails to disclose, or even suggest, the deficiencies of the primary references Gitlin et al. and Popplewell et al. as discussed above with respect to independent

claim 42. Indeed, the Examiner does not even assert such. Thus, the combination of the secondary reference Hui with the primary references Gitlin et al. and Popplewell et al. also fails to disclose, or even suggest, the deficiencies of the primary references Gitlin et al. and Popplewell et al. as discussed above with respect to independent claim 42. Accordingly, claims 51 and 52 should be allowable over the combination of the secondary reference Hui with the primary references Gitlin et al. and Popplewell et al. at least by virtue of their dependency on independent claim 42. Moreover, claims 51 and 52 recite additional features which are not disclosed, or even suggested, by the cited references taken either alone or in combination.

In view of the foregoing, it is respectfully requested that the aforementioned obviousness rejection of claims 51 and 52 be withdrawn.

VIII. THE OBVIOUSNESS REJECTION OF CLAIMS 72-74, 76, 80-88, AND 106-109

On pages 19-25 of the Office Action, claims 72-74, 76, 80-88, and 106-109 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Gitlin et al. (U.S. Patent No. 5,191,462) in view of Popplewell et al. (U.S. Patent No. 6,304,071) and

further in view of Darabi et al. (U.S. Patent No. 6,970,681).

This rejection is hereby respectfully traversed.

Regarding claim 72, the Examiner asserts that it would have been obvious to modify the teachings of Gitlin et al. in view of the teachings of Popplewell et al. and Darabi et al. to arrive at the claimed invention. Specifically, the Examiner asserts that Gitlin et al. discloses generating a second received data value based on the first and second data samples if the mode select signal is in a second state, wherein the second received data value includes more constituent bits than the first received data value, as claimed.

Applicants respectfully disagree. Specifically, Applicants respectfully submit that Gitlin et al. fails to disclose, or even suggest, generating a second received data value based on the first and second data samples if the mode select signal is in a second state, wherein the second received data value includes more constituent bits than the first received data value, as claimed. The Examiner supports his assertion by asserting that the input signal of Gitlin et al. is a multilevel signal, which includes more constituent bits than a binary signal. However, the Examiner incorrectly correlates the input signal of Gitlin et al. to the claimed received data values. That is, the claims clearly set forth that received data values

are generated from data samples of an input data signal. It is not the input data signal or even the data samples that have differing constituent bits. Rather, the claims clearly set for that the second received data value includes more constituent bits than the first received data value. Thus, the Examiner is incorrect that Gitlin et al. discloses, or even suggests, this claimed feature. Also, even though the Examiner rightfully does not assert such, Applicants respectfully submit that Popplewell et al. and Darabi et al. also do not disclose, or even suggest, this claimed feature. Accordingly, is it respectfully submitted that claim 72 is allowable over Gitlin et al., Popplewell et al., and Darabi et al., either alone or in combination.

Regarding claims 73, 74, 76, and 80-88, these claims are dependent upon independent claim 72. Thus, since independent claim 72 should be allowable as discussed above, claims 73, 74, 76, and 80-88 should also be allowable at least by virtue of their dependency on independent claim 72. Moreover, these claims recite additional features which are not disclosed, or even suggested, by the cited references taken either alone or in combination.

Regarding claim 106, the Examiner asserts that it would have been obvious to modify the teachings of Gitlin et al. in view of the teachings of Popplewell et al. and Darabi et al. to

arrive at the claimed invention. Specifically, the Examiner asserts that Gitlin et al. and Darabi et al. disclose a threshold generating circuit for establishing a selected threshold level at a first threshold level if a mode select signal is in a first state, and establishing the selected threshold at a second threshold level if the mode select signal is in a second state, as claimed.

Applicants respectfully disagree. Specifically, Applicants respectfully submit that Gitlin et al. and Darabi et al. fail to disclose, or even suggest, a threshold generating circuit for establishing a selected threshold level at a first threshold level if a mode select signal is in a first state, and establishing the selected threshold level at a second threshold level if the mode select signal is in a second state, as claimed. The Examiner supports his assertion by asserting that Gitlin et al. discloses a reference signal generator, and that Darabi et al. discloses a multimode radio receiver that may be designed to meet the performance standards of multiple wireless standards. However, Gitlin et al. fails to disclose, or even suggest, that its reference signal generator is adaptable to operate in two different modes to generate two different sets of reference signals. Also, Darabi et al. fails to disclose, or even suggest, that its multimode radio receiver is even related

to generating reference signals or threshold levels in any manner, let alone generating such threshold levels in an integrated circuit device, as claimed. Indeed, there would have been no motivation to combine the teachings of Darabi et al. (i.e., a wireless multimode radio) with the teachings of Gitlin et al. and Popplewell et al. since Darabi et al. is so far outside the technology areas of both Gitlin et al. and Popplewell et al., as well as that of the present application. Accordingly, it is respectfully submitted that claim 106 is allowable over Gitlin et al., Popplewell et al., and Darabi et al., either alone or in combination.

Regarding claims 107-109, these claims are dependent upon independent claim 106. Thus, since independent claim 106 should be allowable as discussed above, claims 107-109 should also be allowable at least by virtue of their dependency on independent claim 106. Moreover, these claims recite additional features which are not disclosed, or even suggested, by the cited references taken either alone or in combination.

In view of the foregoing, it is respectfully requested that the aforementioned obviousness rejection of claims 72-74, 76, 80-88, and 106-109 be withdrawn.

#### IX. CONCLUSION



In view of the foregoing, it is respectfully submitted that the present application is in condition for allowance, and an early indication of the same is courteously solicited. The Examiner is respectfully requested to contact the undersigned by telephone at the below listed telephone number, in order to expedite resolution of any issues and to expedite passage of the present application to issue, if any comments, questions, or suggestions arise in connection with the present application.

To the extent necessary, a petition for an extension of time under 37 CFR § 1.136 is hereby made.

Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account No. 50-0206, and please credit any excess fees to the same deposit account.

Respectfully submitted,

Hunton & Williams LLP

By: 

Thomas E. Anderson

Registration No. 37,063

TEA/vrp

Hunton & Williams LLP  
1900 K Street, N.W.  
Washington, D.C. 20006-1109  
Telephone: (202) 955-1500  
Facsimile: (202) 778-2201

Date: October 13, 2006